

Docket No. SA-532

Exhibit No. 16 B

National Transportation Safety Board

Washington, DC

January 27, 2010

Wildlife Factors Group Chairman Factual Report

**Update to Attachment 1:
Smithsonian Institute Feather Lab Analysis
(10 pages)**

Monday, January 19, 2009										
1000 to 1130										
Location: FBI Evidence Recovery Warehouse										
Collectors: Candace Kolander, Mark George, Mike Begier, Allen Gosser										
Bag	Location	Bird Identification	DNA 1	DNA 2	DNA3	Microscope 1	Microscope 2	Microscope 3	Whole feather	Comments
1	Left wing #5 slat, snarge	Canada Goose?; Pigeon/Dove	unsuccessful	<i>Branta canadensis</i>	unsuccessful	Columbiformes	Columbiformes	no feather	no feather	DNA results = weak 95.6%; feather microstructure is Columbiformes (pigeon/dove). Columbiformes (Pigeon) is probably an old, unreported birdstrike.
2	Left wing #5 slat, feather?	Duck (Anas species)	unsuccessful	unsuccessful	unsuccessful	Anatidae	no feather	no feather	no feather	Feather microstructure in slide 1 contained a very good sample of duck down. This is probably an old, unreported birdstrike.
3	Left wing #5 slat, snarge	no identification	unsuccessful	unsuccessful	unsuccessful	no feather	0	0	no feather	No feather and no DNA in sample
4	Left wing #5 slat, piece of tissue with hair?	no identification	unsuccessful	0	0	no feather	0	0	no feather	
5 female	Left wing flap track cover (canoe)	Canada Goose	<i>Branta canadensis</i>	0	0	<i>Branta canadensis</i>	0	0	no feather	DNA results = 99.6%
6	aircraft skin (engine?), feather?	no identification	unsuccessful	0	0	pennaceous feather	0	0	no feather	Pennaceous feather fragment only, not diagnostic for identification purposes

7	Engine skin, feather and possible snarge smear	no identification	Anas sp.	unsuccessful	unsuccessful	plumulaceous feather	0	0	no feather	Inconsistent results for positive identification. Feather microstructure is possibly waterfowl but not diagnostic for identification conformation with DNA.
Notes: Inspected hatch doors with nothing found. Also inspected many miscellaneous										
Monday, January 19, 2009										
1300 to 1545										
Location: Aircraft at Weeks Recovery										
Collectors: Candace Kolander, Mark George, Mike Begier, Allen Gosser										
Bag	Location	Bird Identification	DNA 1	DNA 2	DNA3	Microscope 1	Microscope 2	Microscope 3	Whole feather	Comments
8 male	Engine #2, blade 24, inboard on the mid span shroud, snarge	Canada Goose	<i>Branta canadensis</i>	0	0	<i>Branta canadensis</i>	0	0	no feather	Three different DNA primers yielded same result. DNA = 100%
9 (no sex)	Engine #2, blade 26, inboard on the mid span shroud, feather particles	Canada Goose	<i>Branta canadensis</i>	0	0	<i>Branta canadensis</i>	0	0	no feather	Two different DNA primers yielded same result, DNA = 100%
10	Engine #2, blade 27, inboard on the mid span shroud, feather particles	no identification	0	0	0	no feather	0	0	no feather	Insufficient material in sample for DNA analysis
11	Engine #2, blade 4, smear	no identification	unsuccessful	0	0	pennaceous feather	0	0	no feather	Pennaceous feather fragment only, not diagnostic for identification purposes

12 male	Engine #2, blade 3, possible small feather	Canada Goose	<i>Branta canadensis</i>	0	0	<i>Branta canadensis</i>	0	0	no feather	Two different DNA primers yielded same result, DNA=100%
13	on director strip, mussel fragments?	no identification	unsuccessful	unsuccessful	unsuccessful	no feather	no feather	no feather	no feather	No feather and no DNA in sample; three unsuccessful attempts.
14 female	Left wing, middle flap track, intact feather	Canada Goose	<i>Branta canadensis</i>	<i>Branta canadensis</i>	0	<i>Branta canadensis</i>	0		<i>Branta canadensis</i>	Whole feather in sample; DNA = 100%
Bag	Location	Bird Identification	DNA 1	DNA 2	DNA3	Microscope 1	Microscope 2	Microscope 3	Whole feather	Comments
15	Just aft of radome on left underbelly, snarge with feather particles	no identification	unsuccessful	unsuccessful	unsuccessful	no feather	no feather	0	no feather	No feather and no DNA in sample; three unsuccessful attempts.
16	inside radome, mollusc fragments: do not analyze	no identification	unsuccessful	unsuccessful	0	0	0	0	no feather	No feather and no DNA in sample; three unsuccessful attempts.
17	underside of radome exterior, snarge	Passeriformes	unsuccessful	unsuccessful	unsuccessful	Passeriformes	Passeriformes	Passeriformes	no feather	Passeriformes (songbird). No DNA obtained from three separate sampling attempts. All three microscopic slides have passerine barbules. Most probably an old, unreported birdstrike.
Tuesday, January 20, 2009										
0900 to 1415										
Location: Aircraft at Weeks Recovery										
Collectors: Evelyn Martinez, Mark George, Mike Begier, Allen Gosser										

23 female	(Dolbeer 4/6) OGV outer flow 3 oclock (feather fragments)	Canada Goose	<i>Branta canadensis</i>	<i>Branta canadensis</i>		0	<i>Branta canadensis</i>	0	0	no feather	DNA = 100%
24 female	(Dolbeer 5/6) 3 o'clock ALF under FAP at OGV L.E. outer flowpath (bone and feather frag.)	Canada Goose	<i>Branta canadensis</i>	<i>Branta canadensis</i>		0	<i>Branta canadensis</i>	0	0	no feather	DNA = 100%
25	(Dolbeer 6/6) fan blade flowpath (mollusk shells)	Duck (Anas species)	<i>Anas sp.</i>	unsuccessful	unsuccessful	no feather	0	0	no feather	Mollusk shells in sample, no feather found. Anas species identification possible from river bottom contamination in bivalve.	

Tuesday - Thursday 3-5 February 2009, Engines #1 and #2. Sampled by Richard Dolbeer

Bag	Location	Bird Identification	DNA 1	DNA 2	DNA3	Microscope 1	Microscope 2	Microscope 3	Whole feather	Comments
26 female	Eng. #1 11:30 OGV Vane platform	Canada Goose	unsuccessful	unsuccessful	0	<i>Branta canadensis</i>	0	0	no feather	possible bone in sample
27 female	Eng. #1 8:30 OGV Vane platform	Canada Goose	<i>Branta canadensis</i>	0	0	<i>Branta canadensis</i>	0	0	Whole feather	DNA = 100%
28	Eng. #1 7:30 OGV area platform	Canada Goose	unsuccessful	0	0	<i>Branta canadensis</i>	0	0	no feather	
29 female	Eng. #1 03:00 OGV area	Canada Goose	<i>Branta canadensis</i>	0	0	<i>Branta canadensis</i>	0	0	no feather	DNA = 100%

30	Eng. #1. 0:300 OGV platform	Canada Goose	unsuccessful	0	0	0	Branta canadensis	0	0	feather fragments	
31	Eng. #1 01:00 OGV	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
32	Eng. #1 01:00 OGV #3 under platform	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
33	Eng. #1 01:30 OGV #4 under plane platform	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
34	Eng. #1 02:00 OGV platform	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	large piece of rachis
Bag	Location	Bird Identification	DNA 1	DNA 2	DNA3	Microscope 1	Microscope 2	Microscope 3	Whole feather	Comments	
35	Eng. #1 02:00 OGV under vane	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
36	Eng. #1 02:00 OGV #6 under vane platform	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	large sample of feather fragments
37	Eng. #1 02:00 OVG	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	large sample of feather fragments
38	Eng. #1 02:00 OGV#5 under vane platform	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	

39	Eng #1 03:00 OGV area	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	large sample of feather fragments
40	Eng #1 03:00OGV under acoustic panel	Canda Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
41	Eng #1 03:00 OGV underside	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
42	Eng #1 03:00 OGV	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	large sample of feather fragments
43	Eng #1 03:00 under acoustic panel	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
44	Eng #1 04:00 OGV under acoustic panel	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
Bag	Location	Bird Identification	DNA 1	DNA 2	DNA3	Microscope 1	Microscope 2	Microscope 3	Whole feather	Comments	
45	Eng #1 04:00 OGV	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
46	Eng #1 10:00- 10:30 OGV under vane pannel	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
47	Eng #1 12:00 OGV under vane platform	Canda Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
48	Eng #1 12:30 OGV under vane platform	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	

49 male	Eng. #1 LP stage 4 rotor blade 15	Canada Goose	<i>Branta canadensis</i>	0	0	no feather	no feather	0	no feather	DNA = 100%
50	Eng. #1 LP stage 5 rotor blade 9	no identification	unsuccessful	0	0	no feather	no feather	0	no feather	no feather found in sample; fiber, not feather found in sample
51 female	Eng. #1 LP stage 4 fan blade at 1200	Canada Goose	<i>Branta canadensis</i>	0	0	<i>Branta canadensis</i>	<i>Branta canadensis</i>	0	no feather	DNA = 100%
52 female	Eng. #1 Booster inlet outer diameter of booster shroud at 0400, point of core damage	Canada Goose	<i>Branta canadensis</i>	0	0	<i>Branta canadensis</i>	0	0	no feather	DNA = 100%
53 female	Eng. #1 IVG faring 0200	Canada Goose	<i>Branta canadensis</i>	0	0	<i>Branta canadensis</i>	0	0	feather fragments	DNA = 100%
54 female	Eng. #1 fan frame forward flange booster snap OD 0200	Canada Goose	<i>Branta canadensis</i>	0	0	<i>Branta canadensis</i>	0	0	no feather	DNA = 100%
Bag	Location	Bird Identification	DNA 1	DNA 2	DNA3	Microscope 1	Microscope 2	Microscope 3	Whole feather	Comments
55	Eng. #2 03:30 under OGV platform	Canada Goose	unsuccessful	0	0	<i>Branta canadensis</i>	0	0	feather fragments	small piece of feather
56	Eng. #2 04:30 OGV platform	Canada Goose	0	0	0	<i>Branta canadensis</i>	0	0	feather fragments	
57	Eng. #2 04:00 AFT acoustic panel	Canada Goose	0	0	0	<i>Branta canadensis</i>	0	0	feather fragments	

58	Eng.#2 0:500-0530 OGV platform	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
59	Eng.#2 06:00 under OGV platform	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	large sample of feather fragments
60	Eng.#2 0:700 OGV	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
61 male	Eng.#2 08:00-08:30 OGV Platform	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
62 male	Eng.#2 OGV platform 11:00	Canada Goose	unsuccessful	0	0	0	Branta canadensis	0	0	feather fragments	
63 male	Eng.#2 11:00 under OGV platform	Canada Goose	unsuccessful	0	0	0	Branta canadensis	0	0	feather fragments	
64	Eng.#2 Sample from mud	no identification	unsuccessful	0	0	0	no feather	0	0	no feather	no feather found in mud sample
Bag	Location	Bird Identification	DNA 1	DNA 2	DNA3	Microscope 1	Microscope 2	Microscope 3	Whole feather	Comments	
65	Eng.#2 base of cowing around OGV platform 06:00	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
66 (no sex)	Eng.#2 Booster IGV 04:00 Inlet guard	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	
67 male	Eng.#2 04:00 booster vane IGV	Canada Goose	0	0	0	0	Branta canadensis	0	0	feather fragments	

68	Eng.#2 04:00 Booster OD splitter faring ID	Canada Goose	0	0	0	Branta canadensis	0	0	feather fragments	
69	Eng.#2 combuster	Canada Goose	0	0	0	Branta canadensis	0	0	feather fragments	received from Les McVey 20 April